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24 MARCH 1989

JPRS Report

Telecommunications

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GHANA

Kuntunse Earth Station Being Modernized

55500003 Accra GHANAIAN TIMES in English
31 Jan 89 p 3

[Article by Charles Neequaye: "Kuntunse Earth Satellite Repair Works Progresses"]

[Text] The close-down of the Satellite Earth Station at Kuntunse has not affected external communications, Mr Ben Hadjah, Public Relations Manager of the P&T Corporation, has said.

He explained that the closure on January 17 was to enable rehabilitation and expansion work to be carried out.

Speaking to me in an interview in Accra yesterday, he said now that the station was not functioning the corporation was channelling its external communications through Abidjan and Togo.

He said the corporation was presently using 32 instead of 66 circuits with Cote d'Ivoire providing 30 and Togo two for outgoing and incoming messages.

Mr Hadjah said under the rehabilitation programme being carried out by Marubeni Corporation of Japan, a new diesel engine had been installed, and an automatic voltage regulator provided to check power fluctuations and uninterrupted power supply.

He said the high power amplifier, and the television and telephone transmit chains had been replaced.

The public relations manager said under the expansion programme, new channels of communications to Kenya, Nigeria, Cote d'Ivoire, Liberia and Holland would be installed.

Besides, the corporation would introduce digital circuits instead of analogue as intermediate digital rates, he said.

He said under the multiples programme, the circuits would be increased from 180 to 300 while there would be an automatic tracking system.

The P&T Corporation signed the 9.7 million Japanese yen agreement in last May with Marubeni Corporation of Japan for the rehabilitation, expansion and modernization of the Kuntunse Satellite Earth Station.

The 16.4 million-dollar satellite station project was first awarded to Spar Eurospace of Canada in 1977, but the company failed to complete it even though it had been fully paid for.

Zhejiang Province Improves Telecommunications

HK2302114589 Beijing CEI Database in English 23 Feb 89

[Text] Zhejiang Province has made efforts to improve its telecommunications by making fixed assets investment of 100 million yuan in 1988, according to the Post and Telecommunication Administration of the Province.

In 1988, telephones in the cities increased by 56,000 lines to 280,000, and long-distance telephone increased by 813 lines to 4,500 lines.

In addition, following Hangzhou, three international direct exchanges have been opened in Ningbo, Wunzhou and Shaoxin which can make direct calls to 156 countries and regions.

Foreign funds are being used by the province to further improve telecommunications. To date, Shaoxin and Wunzhou have signed contracts to introduce program-controlled switchboards capable of handling 7,000 lines and 22,000 lines. Hangzhou and Spain have finished negotiations for utilizing a Spanish loan to install facilities capable of handling 50,000 lines. Hangzhou and Shaoxin will use Japanese loans to improve its facilities.

Telecommunications Develop Rapidly in Hubei

HK2702053989 Wuhan Hubei Provincial Service in Mandarin 1000 GMT 26 Feb 89

[Excerpts] It has been reported from the ongoing provincial conference on the work of posts and telecommunications that there have been great advances in the province's posts and telecommunications and their growth rate has been for the first time faster than that of industrial and agricultural production. Last year the province witnessed successes in building optical fiber telecommunications lines in Wuhan, Huangshi, Jingzhou and Shanshi, the microwave telecommunications capacity reinforcement project connecting Wuhan with Shanghai, and the microwave telecommunications projects in Yichang, Danyang, Shiyan, and Xiangfan. [passage omitted]

Nevertheless, increasing demand for telecommunications still exceeds supply in the province. The meeting stressed that continuous efforts must be made to increase the capacity of telecommunications and improve the quality of telecommunications.

HUNGARY

AXE Switching Equipment From Ericsson To Be Introduced

55002453 Stockholm DAGENS NYHETER in Swedish 8 Mar 89 p 14

[Text] The Swedish AXE system is about to be introduced into Hungary. Representatives of the Ericsson Swedish electronics chain are now in Budapest to aid in the installation of a new international telephone center. Hungary is the first country in the socialist bloc to introduce the Swedish AXE system. The Hungarian postal and telecommunications agency, Magyar Posta, and Ericsson have been negotiating this deal for several years. The deal has been delayed because the so-called Cocom regulations—against the transferring of strategically sensitive technology from the West to the East—prohibited introducing digital technology into the East Bloc.

MEXICO

Ericsson Plans $20 Million Investment in 1989

5500001 Mexico City UNOMASUNO in Spanish
1 Feb 89 p 19

[Text] This year Ericsson Teleindustries plans to invest $20 million in order to stimulate the telecommunications industry in Mexico, to increase exports, and accelerate technological development, the chairman of its board of directors, Luis Antonio Chico Pardo, reported at the company's general stockholders meeting yesterday.

During the meeting held in the company's headquarters located in Tlainepantia in Mexico state, Chico Pardo told the stockholders that in 1988 Ericsson further improved its internal reorganization, a process which began in 1982. During this process capital investments were made in 1983 and 1987, along with financial improvements, enabling the firm to channel greater resources into productive operations, primarily for technological renovations and the establishment of automated production processes, making the plant more competitive internationally.

The chairman of the board of directors pointed out that the firm has changed the closing date of its fiscal year to 30 September of each year. For this reason, the 9 months discussed in its current report are not comparable with the 12-month period of the preceding fiscal year.

On the subject of the company's development during this 9-month fiscal period, he noted that sales came to a total of 307.261 billion pesos. The operating results were 37.575 billion pesos, while net earnings came to 55.643 billion pesos, with a profit of 186.09 pesos per share.

He told the stockholders that the period under discussion had certainly marked a new era of advances for Ericsson. Among other significant achievements, he cited the following:

- a. The signing of a very large contract for 1990, in which the firm has agreed to deliver 429,000 telephone lines. This contract will provide Mexico with over 2 milion AXE-equivalent lines, thus reasserting Ericsson's leadership in Mexico as a supplier of the Public Digital Telephone Switching System.
- b. The value of the orders for telephone exchanges and transmitting equipment for the next 2 years exceeds $500 million.
- c. The introduction of mobile cellular telephone service, with the delivery to TELMEX (Telephones of Mexico) of the first mobile cellular telephone system for use in the city of Tijuana, Baja California.
- d. The agreement to install the first phase of the superimposed network in mid-1989. With this system, Telephones of Mexico will be able to offer the most up-to-date services to major telecommunications users in cities with the largest volume of business activity in Mexico. This is an indication of the advantages of having a base of Ericsson's AXE Digital Telephone Exchanges installed in Mexico, now amounting to over 1.5 million lines.
- e. The sustained growth in exports which has again increased by 150 percent. Invoicing for the 12 months of the year came to $35 million; this was 11 percent of Ericsson's total sales.
- f. The expansion of Ericsson Teleindustries as one of the production centers for digital computers to meet the Ericsson Group's worldwide needs, making use of the international competitiveness and efficiency of its operations.

At the general stockholders meeting, which was also attended by the firm's CEO, Raimo Lindgren, Chico Pardo stated that in its commitment to Mexico, Ericsson Teleindustries is working on innovative plans to stimulate the industrial development of Mexican telecommunications, to increase exports, accelerate technological development, and most of all, to make the best possible use of the base of digital systems already installed in the network, while moving toward the new concepts of intelligent networks.

In concluding his speech, he reported that in order for the company to meet its goals, during the present year Ericsson will invest $20 million.

INDIA

All-India Radio To Set Up 205 New Radio Stations

55500043 Madras THE HINDU in English 24 Dec 88 p 10

[Text] All India Radio will set up 205 stations in the country be the end of the seventh Plan and it is now self-reliant in planning, operating and maintaining the radio broadcasting system, according to Mr S.P. Bhatikar, Engineer-in-Chief, AIR. There are now 96 AIR stations, reaching about 600 million domestic listeners.

Inaugurating a seminar on 'Broadcasting: 50 years of technical development and future horizons," organized by AIR, Madras, Mr Bhatikar said there was rapid development in electronics and AIR had to reshape its requirements to keep pace with this development. The four AIR stations in Madras, Calcutta, Bombay and Delhi would have the latest stereo recording equipment. Earlier, direct broadcasting accounted for a major portion of AIR's programmes. But 90 per cent of the programmes broadcast today were now recorded and recording continued to be an area of weakness. Special acoustic designs were being worked out for the multichannel recording studios to be installed at the four metropolitan centers.

Compact discs: AIR would also go in for compact discs as the conventional vinyl discs (viz gramophone records) had become scarce.

This posed a great difficulty for AIR since it was dependent on gramophone discs for broadcasting commercial music. Technical considerations precluded the possibility of using commercially available cassette-tapes for broadcasting. Hence, the decision to produce the commercial music on compact discs and compact disc players were being procured. From January 1, 1989, several stations would record music on digital tapes and they would switch over later to compact discs.

Centers of excellence: Mr Bhatikar said AIR would set up centers of excellence for programme production in the Eighth Plan, producing high quality music and drama and compact discs. These centers would have nothing to do with transmission. Right now, there were no microwave links from the outside broadcasting vans to the studios. AIR would acquire self-contained mobile transmitters for disseminating news from accident-sites. Flood-ravaged areas, etc. It would procure four transportable uplink terminals (TRACTS) for coverage of news and special events from remote locations.

Cable replacement: The underground cables at the existing AIR stations were being replaced in a phased manner. AIR would have its own studio-transmitter links for future projects, including the Seventh Plan projects. The latest, high-quality microphones were being introduced in the network, he added.

Mrs Sudha Bhatia, Superintending Engineer AIR, Madras, who welcomed the gathering, said the seminar was being organized as part of the Madras station's golden jubilee celebrations.

Mr T. Rajagopalan, Station Engineer, AIR, Madras, who proposed a vote of thanks, said it was through such interface with technical personnel that AIR would have purposeful interaction with listeners.

Parliament Told About Cause of Satellite Failure

BK2802092689 Delhi Domestic Service in English0830 GMT 28 Feb 89

[Text] The failure analysis committee on the unsuccessful mission of ASLV-2D [Augmented Satellite Launch Vehicle] has said that the mission failed [on 13 July 1988] due to the break up of the upper portion of the vehicle 50.4 seconds after liftoff. The minister of state for science and technology and space, Mr K.R. Narayanan, said in a written reply in the Rajya Sabha today that the expert review panel is also independently examining all the data to find the exact cause of the ASLV failure. He said the findings of the expert panel are still awaited.

Space Commission Head Tells Plans for Satellite Imagery

55500046 Bombay THE TIMES OF INDIA in English 25 Dec 88 p 11

[Article by L.K. Sharma]

[Text] A major new programme to continue and enhance remote-sensing facilities has been approved by the space commission which has promoted several regional centers for popularizing the use of the satellite imagery for the management of natural resources.

Two new remote-sensing satellites, IRS IC and IRS LD, are to follow the second remote-sensing satellite IRS LB which is to be launched in 1991.

Prof U.R. Rao, chairman of the space commission, told reporters today that the next two remote-sensing satellites would have better spatial resolution and were expected to be launched in 1193 and 1995.

India has not shown any interest in putting a new generation sensing device on a Soviet remote-sensing satellite since such a facility was being offered on commercial terms and not as a joint development project.

India has started developmental work on microwave remote-sensing, but as yet has no plans to build an operational satellite with the capability of see-through cloud cover. As a preparatory step, it has been decided to buy microwave satellite imagery from the European space agency when its satellite starts transmitting this.

A new unit will be added to the satellite earth station near Hyderabad which was at present equipped to get data from Landsat and spot satellites. The Indian center was supplying some neighboring countries also.

The data utilization within the country had picked up and significant results had been shown in the areas of forestry, water management and groundwater prospecting, snowmelt studies, tracing of mineral resources and oil, agriculture and drought management.

In the field of communications, the current anxiety over the Insat capacity would be over when the Insat 1D is launched by the American Delta rocket in April or May next year. The anxiety has been caused by the partial crippling of the Insat 1C launched by Ariane.

As for the launch vehicles, according to Prof Rao, the fault analysis report on the failure of the last augmented satellite launch vehicle (ASLV) was expected soon. The high-level expert committee was keen to hear the views of those who had any theories of the failure of the vehicle.

The work on the next general PSLV, polar satellite launch vehicle, was proceeding satisfactorily, he said.

Space Center Chief Tells of Satellite Plans
55500045 Bombay THE TIMES OF INDIA in English 23 Dec 88 p 10

[Text] The development of the polar satellite launch vehicle (PSLV) is progressing on schedule and its launch in 1990 can precede that of the third augmented satellite launch vehicle (ASLV), Dr S.C. Gupta, the director of Vikram Sarabhai Space Centre, said here on Tuesday.

In an informal talk with reporters at a seminar on "electronics in space", he said, that the schedule of PSLV's development and launch was not affected by the two failures of the ASLV. The PSLV, to be launched from the Sriharikota launch complex near Madras, will place a 1000-kilogram satellite in a 900-kilometer sun-synchronous orbit. The seminar has been organized by "Electronics Today".

Referring to the recent failure of the ASLV, he said, that an internal committee of the Indian Space Research Organization (ISRO), of which he was the chairman, had finished its report. The external expert review panel, headed by the director of the National Aeronautical Laboratory (NAL), Dr Roddam Narasimha, was expected to submit its report in about a fortnight.

The other members of the external committee were the director of the defence research and development laboratory, Dr Abdul Kalam, and Dr Valluri, an aeronautical experts, he said.

He said the data obtained of the 150 seconds of ASLV's flight proved useful for the investigations. Though he declined to comment on the cause of the failure, other ISRO officials hinted that it could not be attributed to the failure of the first stage motor as it was initially made out.

The project director of the INST 2 test spacecraft project, Mr P. Ramachandran, said that the present trend was to standardize the spacecraft systems for reasons of large quantity production, easy replacement, economy and smaller lead times. The cost of a spacecraft was Rs 40 crore, he said.

Mr P. Radhakrishnan, head electronics division, Vikram Sarabhai Space Centre, said that the PSLV would have a half-a-dozen on-board computers with a provision for redundancy.

Mr K. Narayanan, director, satellite communication programme, ISRO, said that future INSAT systems would be used for satellite news gathering, services for specific groups and expanding disaster warning services.

Computers, Earth Stations Planned for All Districts
55500044 Madras THE HINDU in English 23 Dec 88 p 16

[Text] The National Informatics Centre (NIC) of the Planning Commission, expects to set up "one computer and one earth station," by March 1989, in all its 441 districts under the Nationwide Computerized Decision Support Information System (NICNET).

This was stated here by Dr N. Seshagiri, NIC, Director-General at a seminar on "technology spin-off from electronics in space, atomic energy and defence." He said 300 districts had been provided with an earth station each with a four-level, hierarchic data bases and random access communication. Of this 150 had commenced operation.

The technology adopted for the communication system is the spread spectrum multiple access in the place of the usual time division multiple access technology.

This new innovation was being implemented by the joint company formed by the ITI and the Equatorial Inc. U.S.

A crash programme was being launched by the NIC to set up 55 such earth stations for NICNET in the next one month. In addition to NICNET nodes, the NIC would put up earth stations for various other agencies.

Orissa Television Transmitter Inaugurated 4 Mar
BK0603015489 Delhi Doordarshan Television Networkin English 1600 GMT 5 Mar 89

[Text] In Orissa, a low-power TV transmitter has become operational at Phulbani. The minister of information and broadcasting, Mr H.K.L. Bhagat, inaugurated the transmitter yesterday. This is the 11th TV transmitter in the state. The transmitter will benefit nearly 1.5 lakh people in the tribal-dominated districts.

Increase in International Telecom Traffic Planned
55500050 Bombay THE TIMES OF INDIA in English 20 Jan 89 p 6

[Text] The Videsh Sanchar Nigam Ltd. (VSN) is planning to increase its international telecom traffic and reduce costs by modernising its equipment.

Delineating its growth pattern, Mr T.H. Chowdary, chairman and managing director, VSN, said here on Tuesday that by March 31 this year VSN will have over 1,900 international telephone circuits, thereby doubling its traffic capacity since VSN's inception three years ago.

Referring to Bombay, Mr Chowdary said that 52.5 per cent of international telephone circuits (901) and 57.5 per cent of international telex circuits (158) operate from the city.

In November last, VSN commissioned an international gateway packet switching system (GPSS) in Bombay which enables 4,000 data bases in the world to communicate with each other. Early this year it commissioned an earth station which works through the Atlantic Ocean region satellite enabling Indian traffic to be received directly on the east coast of USA from where it can go its specific destination in America.

The VSN's existing two earth stations at Arvi (near Pune) and Dehradun were working through the Indian Ocean region satellite and could carry traffic only up to Europe. This addition has reduced cost by nearly 50 per cent.

Videsh Sanchar's fourth gateway will be commissioned at Calcutta and will start operating by the end of this year.

The VSN will also be converting its analogue circuits to digital circuits to further cut down on cost by eliminating the switchover to digital microwave radio links at the international level, Mr Chowdary said.

In the maritime world, a Rs 16-crore coast earth station will be commissioned through which international maritime circuits can be established. At present ships are using Japanese or Norwegian earth stations which turn out to be more expensive and incur loss of foreign exchange.

An interesting facility to be provided by the VSN will be the electronic telex and voice mail-box where international telex or telephonic messages can be stored till the owner returns and uncodes them. The mail-box number could be displayed on the owner's visiting card. The telex mail-box will be test marketed before March this year, Mr Chowdary said. The voice mail-box will be introduced in September.

The VSN will also be introducing credit card calls facility which will enable the credit card holders to pay for international calls through their credit cards.

A most helpful service to be introduced will be the international operator direct connection service (IODC) where foreigners would be able to pay for international calls in their own currency by dialling certain abbreviated numbers and reaching their home country's operator directly.

Telecommunications Commission To Be Set Up
55500048 Madras THE HINDU in English 28 Jan 89 p 1

[Text] The Union Cabinet has approved the setting up of a Telecommunications Commission with adequate autonomy and flexibility to handle all matters relating to that sector. With this the Telecommunications Board, running the Department of Telecommunication, will be abolished.

The decision to constitute the Telecommunications Commission has been taken in pursuance of the recommendations made by the Science Advisory Council to the Prime Minister. The Council, in its report submitted in July 1988, had proposed such a commission as an apex policy and regulatory body with full financial and administrative powers and with the responsibility of modernising the telecom equipment and services in as short time as possible.

An official spokesman told presspersons here today that the proposed commission will have authority similar to the Railway Board. It will have a Chairman and four full time members all of the rank of Secretary to the Government. Besides it will have as part-time members Secretaries to the Department of Industrial Development, Department of Electronics, Ministry of Finance and the Ministry of Planning. The Chairman and the full-time members will have a minimum tenure of three years to ensure continuity, accountability, and smooth and efficient working. The Commission will report to the Minister of Communications.

Not adequate: The spokesman said that the Government felt that the Telecommunication board was not adequate to meet the growing telecom needs. The Chairman and the full-time members of the new Commission may be drawn from among the best talent available in the public and the private sectors including from within the department. As per the work allocation, one full-time member will be in charge of technology, production, finance and services respectively. The Commission, when set up, will take over the legal and statutory authority, vested in the Telecommunication Board.

The Commission, approved by the Union Cabinet on January 25, will be the nodal agency for developing telecom system and related industry. All applications for industrial licence, foreign collaborations, import of capital goods and other equipment, etc., connected with telecommunications, will be approved only on recommendation by this Commission.

The administrative control of C-DoT [Center for the Development of Telematics] will be transferred from the

Department of Electronics to the Commission. Besides, wireless planning and coordination will also be placed under its control.

Since the Chairman of the new Commission will be of the rank of a Secretary, speculations about Mr. Sam Pitroda, an adviser to the Prime Minister, taking up the position was set at rest as he now enjoys the status of a Minister of State.

Huge wait list for phones: As of September 1988, over 12 lakh persons were in the waiting list for telephone connections. The waiting list for telex connection was 3,400. Moreover, the quality of the services, according to the spokesman, was not good. He said official estimates indicated the demand for telephone to go up to 19 millions by the year 2000. To achieve this objective and other requirements, the annual growth rate in the telecom sector will have to be stepped from the present seven to eight per cent to 15 to 16 per cent.

New Type of Maritime Telex Service Commissioned

55500047 Madras THE HINDU in English 2 Feb 89 p 3

[Text] A Maritime Telex Service, using Narrow Band Direct Printing (NBDP) system, the first of its kind in the country, was commissioned today at the Central Telegraph Office by Mr N.R. Hiregange, Member, Telecom Operation, Department of Telecommunications.

Mr. Hiregange made a call to M.V. Tamil Anna sailing 650 nautical miles north east of Madras coast.

The service can be used to contact ships located up to a distance of 10,000 km, and telex calls can be made between ships with NBDP equipment. Any telex subscriber in India or abroad can make use of the system.

Ships or telex subscribers can get in touch with the control operators at the Madras CTO [Central Telegraph Office] for establishing communication. Facilities are also available for storage of messages for onward transmission at any required time. The system uses high frequencies for contacting ships and it is provided with Automatic Request for Repetition feature for error-free service.

Available facilities: The telex machines at the coastal station have been provided with facilities including floppy storing, message storing, automatic forwarding of messages at pre-set time and also a video display unit for better supervision.

A transmitting station at Meenambedu and a receiving station at Ennore are connected to the coastal station through Ultra High Frequency links and coaxial cables.

The system can transmit printed communication between any ship and any subscriber in India or abroad and it has a high networking availability with high reliability and error-free performance.

Mr. Hiregange said the Department of Telecommunications had drawn up a five year modernisation plan. The Department was trying out electronic machines and trial orders had been placed for electronic key-boards for telegraph offices in rural area.

Fax service: He said the Fax service would be extended to cover all the important towns and 300 stations would be set up by the year end.

Mr. S. Muthuswamy, General Manager, Maintenance, said the Maritime Telex Service was being introduced on a semi-automatic basis.

Mr. P. Kameswara Rao, General Manager, Project, said the NBDP equipment had been procured from Japan. It had been installed four months ago and for the last two months it was under trial.

First Optical Fiber System Inaugurated

55500049 Bombay THE TIMES OF INDIA in English 24 Jan 89 p 13

[Excerpt] The Union minister of state for communications, Mr GiriGar Gomango, inaugurated the country's first long-distance optical fibre communication system between Ahmedabad and Baroda, here today.

Mr Gomango said similar optical fibre routes would shortly be commissioned between Bombay, Udaipur via Ahmedabad, Bombay-Pune and Bhopal and it was planned to increase telephone connections to 93 lakhs by the end of eighth plan from the present 40 lakhs in the country.

The Rs 3-crore project for laying 125 km of optical fibres with three intermediate stations at Kheda, Nadiad and Anand was executed in record period. [passage omitted]

IRAN

Abdanan Television Transmitter Rebuilt

LD0702113387 Tehran Domestic Service in Persian1030 GMT 7 Feb 89

[Text] The reconstruction of Abdanan's television transmitter, which had been severely damaged during the course of the imposed war, has been completed. The station was reopened today in the presence of Mr Kashemi, the director- general of the Islamic Republic of Iran's Voice and Vision [IRIVV].

The technical deputy of the IRIVV told the Central News Unit's correspondent that the Abdanan television station, which has been rebuilt at a cost of 100 million rials—consisting of foreign exchange and rials—will provisionally broadcast the programs of the television's first network. We hope that by rebuilding the station, we may be able to

reinstall the technical equipment required to transmit UHF, VHF, and four FM channels. He added that with this station, parts of Lorestan, Khuzestan, and Ilam Provinces will hopefully come under the cover of television's first network.

TV, FM Transmitters Inaugurated in Kalat

LD0203121389 Tehran Domestic Service in Persian1030 GMT 2 Mar 89

[Excerpt] Powerful television and FM transmitters in Kalat, in Khorasan, began transmission at noon today with a ceremony. The transmitter brings the northern part of the country, comprising the frontier strip of Khorasan Province, extending from Sarakhs to Daraganz, under the cover of the first and second networks of the Vision of the Islamic Republic of Iran.

The Kalat television transmitter, installed on the summit of (Zor) mountains, covers a site of 8,000 sq meters. Total building area covers a site base of 1,000 sq meters. The Kalat television station consists of two 10-kw television transmitters and two 10-kw FM radio transmitters. They have been installed and brought on line through the efforts of the expansion unit of the television network. For each one of the transmitters a reserve transmitter of 10-kw capacity is being considered. [passage omitted]

Qom Telephone Network Upgraded

55004706 Tehran KAYHAN INTERNATIONAL in English 12 Jan 89 p 6

[Text] Coinciding with the eleventh anniversary of an uprising by the people of Qom (9 January 1978), a 5,000-line automatic telecommunication center was inaugurated and switched into service, the Islamic Republic News Agency said Tuesday.

The inauguration ceremony was held in the presence of Minister of Post, Telephone and Telegraph Muhammad Gharazi as well as a number of religious and government officials.

Referring to telecommunication facilities in the country before the victory of the Islamic Revolution, the minister of P.T.T. said some 800,000 telephone lines had been installed whereas during the post-revolution period the total capacity has been increased to 2.4 million lines.

Gharazi outlined the future plans of his ministry and announced that 1.6 million new telephone lines will be available nationally during the next five years.

Hajjiabad District To Receive TV Programming

LD2102165289 Tehran Domestic Service in Persian0730 GMT 21 Feb 89

[Text] The television transmitter in the Hajjiabad District in Bandar-e 'Abbas was commissioned. According to a Central News Unit report, with the commissioning of this 10w transmitter, which will operate by way of the satellite system, the inhabitants of (?Sarkod-e Ahmadi) region in Hajjiabad in Bandar-e 'Abbas and the nearby villages will, from now on, be able to receive the first television network programs for the first time on Channel 10.

KUWAIT

First Phase of Telecommunication Tower Completed

55004513 Kuwait ARAB TIMES in English 28 Jan 89 p 4

[Text] The first phase of a $90 million telecommunication tower has been completed and the second and last phase will be completed by the end of March, Kuwaiti Minister of Public Works 'Abd al-Rahman al-Huti has said.

Following an on site inspection of the downtown facility Thursday the minister told KUNA the 375 metre high tower is one of the world's unique towers and that it will be used not only by the Ministry of Communication but also by the Ministries of Interior and Information.

A revolving restaurant is being built on the tower at an altitude of 170 metres, Al'Huti said.

The minister referred to some difficulties facing the construction of this tower attributing them to the very nature of the project and the technicalities involved.

Asked about his reaction to the completion of the tower's first phase, Al-Huti expressed satisfaction indicating that an accurate judgement on the work could be passed unless and until the project was finalised.

The minister called for more co-operation between the parties executing the project, the Ministry of Public Works and the contractor and the consultant engineering bureau "in order to overcome all difficulties."

GCC States Consider Acquiring Own Satellite

55004512 Kuwait ARAB TIMES in English 22 Dec 88 p 4

[Text] Bahraini Information Minister Tariq al Mu'ayyid said the Gulf Co-operation Council states are considering the acquisition of a satellite of their own.

Al Mu'ayyid, told a local daily today that half of the capacity of the Arab satellite (ARABSAT), since it was launched, has not been used.

He added that the idea of launching satellites is also being considered by a number of Arab states and this trend must be encouraged.

Discussing the Gulf television transmission, the Bahraini minister said that he was always against the idea of

one unified Gulf TV. He would like to see variety and competitive TV stations to enable Gulf inhabitants to choose what interests them.

Replying to a question on Gulf information co-operation, al Mu'ayyid indicated such cooperation existed a long time ago and was first embodied when the Gulf Co-operation Council was established.

In this context, he expressed hope that a meeting for owners of Gulf newspapers (private press) be convened before the end of the year to discuss media co-ordination.

"I have agreed with the GCC Secretariat to call for a first meeting of media editors to discuss coordination on basic journalistic matters," the minister told the Bahraini daily AKHBAR AL-KHALIJ.

"It is not enough that (GCC) information ministers agree on the charter of media owners ... There should be an exchange of feeling between the press and information ministers on how to implement these pacts," he said.

"We feel there is a possibility of achieving this (GCC pact) as a true desire to co-operate exists in the Gulf press," he added.

The GCC, which groups Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates in a political and economic alliance, is due to hold its 1988 summit in Bahrain in mid-December.

PAKISTAN

Radio, TV Program Protocol Signed With USSR

BK0203092489 Islamabad Overseas Service in English0800 GMT 2 Mar 89

[Text] Pakistan and the Soviet Union today signed a protocol for cooperation and exchanges in the field of TV and radio broadcasting during 1989-90. It provides for exchange of TV and radio programs depicting social, scientific, cultural, and sporting aspects in both countries. Both sides agreed to cooperate in covering the visits of Pakistani and Soviet delegations to the USSR and Pakistan and to exchange TV and radio programs for appropriate use on the national days of the two countries. The two sides shall exchange TV news stories and radio programs on the life of the Soviet and Pakistani people well as recordings of instrumental and folk music.

SAUDI ARABIA

King Fahd Satellite Telecommunications City Described

55000451 Jeddah ARAB NEWS in English 22 Jan 89 p 2

[Article by K. S. Ramkumar, Arab News Staff: "Satellite City Facilities Explained to Delegates"]

[Text] The gigantic progress made by King Fahd Satellite Telecommunications City (KFSTC) was viewed by a 21-member group of exhibitors who participated in the just-concluded Commtel and Middle East Computing'89 exhibition during a visit to the city at Jeddah-Umm al-Salam organized by Al-Harithi Company for Exhibitions Ltd. last week.

Addressing the visitors, Engineer Bakr Qadduri of KFSTC explained the operations of the city and its development since its inauguration by the Custodian of the Two Holy Mosques King Fahd in July 1987. With the continuous progress of the satellite communication network worldwide which has enabled transmission of TV programs and telephone contact among nations, the introduction of a new service on board the aircraft of the Kingdom's national airline in line with certain world airlines seems to be a distinct possibility in future, he added.

An audio-visual show held on the occasion gave an insight into the operations of KFSTC, described as the largest satellite communications complex in the Middle East and one of less than 200 worldwide.

It is situated along the expressway between Jeddah and Mecca. Technical engineer Husayn Sha'lan conducted the group around the satellite city which occupies an area in excess of one million square meters and consists of four earth stations with their antennae, a main building containing the control center and management offices, a mosque, housing villas, and back-up electrical power turbine generators.

The city is connected with the Kingdom's public telecommunications network primarily by a state-of-the-art cable system employing the latest transmission technology. A digital microwave system forms a back-up link. It offers enhanced facilities that supplement the three existing earth stations in Riyadh.

The city's four satellite earth stations consist of two to communicate with Intelsat, one with Arabsat and one with Inmarsat, the last being for marine, air and mobile telecommunication. Besides serving the Kingdom's needs, these facilities enable the Kingdom to provide international transit services. As a result, the Kingdom has become the world's fifth largest user of satellite telecommunication facilities, according to a booklet on the city brought out by the Ministry of Posts, Telegraphs and Telephones (PTT).

According to technical details provided, the Arabsat earth station is the major telecommunications link with the other countries of the Arabsat Organization. The station has a capacity of 850 circuits in addition to television reception and transmission facilities. The antenna is 11 meters in diameter.

The Intelsat earth station for Atlantic Ocean satellites (Jeddah 4) is the means of communicating with countries in the Atlantic Ocean region. Its capacity is 1,400 telephone circuits in addition to television transmission and reception facilities. The antenna is 32 meter in diameter.

The Intelsat earth station for Indian Ocean satellites (Jeddah 5) helps communications with countries in the Indian Ocean region. Its capacity is 1,300 telephone circuits in addition to television transmission and reception facilities. The antenna is 32 meters in diameter.

Through the Inmarsat station, communications are possible with marine vessels, aircraft and mobile vehicles via the public telecommunications network. The station is linked to the Inmarsat satellite over the Indian Ocean and has an initial capacity of 12 telephone and 22 telex circuits, which may be expanded. The antenna is 13 meters in diameter.

The group tour was organized by Al-Harithi company which arranged the exhibition through the courtesy and cooperation of the Ministry of PTT which actively supported and participated in the event.

EUROPEAN AFFAIRS

EC Official Assesses Telecommunications Reforms

AN890067 Brussels PROCEEDINGS OF CONFERENCE ON EUROPEAN TELECOMMUNICATIONS REFORMS in English 16-17 Jan 89 pp 1-8

[Paper presented by Herbert Ungerer, department head in the Telecommunications Policy Directorate (DG XIII) of the EC Commission, at the Conference on European Telecommunications Reforms in Brussels, Belgium on 16 January 1989: "Unique Dynamics of Integrating the European Telecommunications Market Into a Single Market"]

[Text] It is almost one year now since the European Commission published its plans for implementing the Green Paper on the development of the Common Market for telecommunications services and equipment. Already we have made substantial progress with those plans. We have stuck to the timetable, and are on course—on course not only for reaching our 1992 goals, but reaching them by 1992!

I am sure that with the distinguished audience present there is no need for me to go into great detail regarding the contents of the Commission's June 1987 Green Paper[1]. Indeed, the broad lines of the Green Paper are becoming increasingly well known even outside the ranks of telecoms specialists. But it is nevertheless important to be aware of the extent of the very broad consultation process which followed its publication. Indeed, it was the success of this consultation process in creating consensus around proposals for the implementation of the broad thrust of the Green Paper which laid the foundation for the Commission publishing last February, its specific proposals for the implementation of the Green Paper, along with a detailed timetable[2].

These proposals were subsequently approved—unanimously—by the EC Council of Ministers, representing all member-states of the European Community, meeting in June 1988—the first anniversary of the Green Paper's appearance. In adopting its *Resolution on the Development of the Common Market for Telecommunications Services and Equipment up to 1992*, that Council gave the green light to the Green Paper.

Consensus

The wide-ranging debate over the future arrangements for telecommunications, which the Green Paper launched and facilitated, established broad consensus on four fundamentals:

- First, that technological changes are making regulatory change an inevitability—not an optional extra; and that the Community must therefore move towards a more competition-oriented environment, particularly in the telecommunications terminal and services field;
- Second, that since regulatory changes are in any case underway in all member-states, there is a role for the Community in developing a common understanding concerning the European context of this evolving picture;
- Third, that with December 1992 approaching fast, the Community needs to agree without delay on common orientations at the European level, with a well planned time schedule for implementing the necessary measures; and
- Fourth, that the Community-wide market must be based on Community-wide network integrity, built on an intensification of cooperation between the Telecommunications Administrations for the coordinated introduction of networks and services.

Based on this foundation of consensus, the Commission's timetable for completing the internal market for telecommunications focuses on the following four areas:

A. First, the rapid full opening to competition of the terminal equipment market by 31 December 1990 at the latest. Acting under its mandate for EC competition law, the Commission issued a directive in May 1988 based on Article 90 of the Treaty of Rome. This directive is currently the subject of an appeal to the European Court of Justice from the French Government for its partial withdrawal, an appeal which was joined subsequently by Belgium, Italy, and the Federal Republic of Germany. The substantive point which I would want to stress in relation to this is that there is no disagreement on the substance of the directive—only on the technicality of which article should be used to achieve the commonly agreed objectives. It is also worth explaining that during appeal, the directive remains in force. The Commission's deadline remains—to complete the internal market for telecommunications terminal equipment by the end of 1990.

B. The second main area for Community action to complete the internal market for telecommmunications is in services, where we have announced the progressive opening of the market to competition from 1989 onwards, with all services other than voice, telex and data communications to be opened by 31 December of this year. Two important and complementary decisions have been adopted: the first to ensure respect for competition rules and the other for the harmonization of access conditions to the telecoms networks, known as Open Network Provision, or "ONP." The first move aims to open up to competition the markets in telecommunications services—consultation on the proposed measures are now underway. On the other hand, the EC has adopted a proposal for a Council directive based on Article 100A, which establishes the framework for the definition of harmonized conditions for free access to and use of the public telecoms infrastructure and of public telecoms services—that is, for Open Network

Provision, ONP. These two measures represent important steps forward in the implementation of the proposals contained in the European Commission's Green Paper.

C. The third main area for completing the internal market is in satellite receive-only dishes not connected to the public network. The market for such satellites is to be fully opened by 31 December of this year, under the provisions of the terminal directive.

D. The last of these four main areas for completing the internal market concerns the progressive implementation of the general principle that tariffs should follow overall cost trends. The Council, in its June 1988 Resolution, made clear that Telecommunications Administrations will have to move towards a greater cost orientation for tariffs. There will then be a review of the extent to which this has been achieved by 1 January 1992. I would add, however, that the achievement of this aim will not need rely solely on regulatory actions, since there are already international trends in competition pushing in this direction of cost-orientation. The Commission is therefore confident that combined with a clear expression of political will at Community and national level, this will initiate a dynamic movement towards reaching our cost-orientation objectives.

Action is, of course, being pursued on a number of other fronts, of which I will briefly mention six:

1. First, the principle of having a clear separation of regulatory and operational activities is by now generally recognized and integrated in all the various member-states' reform projects. In addition, the Commission directive on competition for terminal equipment requires the separation of terminal equipment approval authorities from the Administrations;

2. Second is the detailed definition of Open Network Provision, initially to cover access to leased lines, public data networks and ISDN. The resolution adopted by the Council in June 1988 put the point as follows, and I quote:

"Rapid definition, by Council directives, of technical conditions, usage conditions and tariff principles for Open Network Provision, starting with harmonized conditions for the use of leased lines, is of crucial importance and closely linked with the creation of an open common market for non-reserved telecommunications services."

As already mentioned in relation to opening up the services market, a first Framework Directive was submitted to the EC Council of Ministers in December, and this will be followed by further directives according to progress in working out harmonized access and usage conditions for the individual areas. An important consideration will be ensuring user and industry input into the process, as well as ensuring full opportunity for public comment—taking account of some criticism in this respect voiced in the past;

3. Third, the proposal in the Green Paper for the creation of a European Telecommunications Standards Institute (ETSI) has already resulted in a major reform of the standards-setting process in the sector. ETSI was established in April 1988, based in Sophia-Antipolis near Nice;

4. Fourth, Value-Added Tax is to be applied to all Telecommunications Administrations by 1 January 1990 at the latest;

5. Fifth is the need for guidelines for the application of competition rules to the telecommunications sector, to ensure fair market conditions for all market participants;

6. And last but not least comes the opening of the public telecommunications operators' procurement procedures. The Commission submitted a proposal for a directive in October 1988, for a progressive opening of such procurement markets to bidders from other member-states, aiming to reach 100 percent open procurement markets by 1992. The aim is thus to eliminate any undue—and hence discriminatory—influence on these procurement decisions.

WATT-C

So much for the European market, on which I was invited to talk. I cannot finish, however, without saying just a few words on the global context of all this, and in particular on the recent ITU World Administrative Telegraph and Telephone Conference (the WATT-C). Indeed, the need for Community solidarity with regard to the major international issues affecting telecommunications is central to the success of the internal market, and has been seen as such since the appearance of the Green Paper, through the resulting consultation process and up to the Council's Resolution of June 1988. The preparatory work for WATT-C certainly demonstrated just how difficult a process the working out of such common positions can be. But equally, the final results of the conference demonstrated that all member-states now recognize their basic common interest in the telecommunications area.

The new International Telecommunications Regulations were adopted and the Final Acts signed in December. This was the first time that the Community as such participated in an ITU Conference—perhaps the most complex such conference in the ITU's 120-year history. The final text is a painstakingly worked-out compromise accepted by all—albeit no doubt with varying degrees of satisfaction. But certainly, not only did all twelve member states sign, but this was accompanied by the submission of a joint declaration stating that they will all apply the regulations in accordance with their obligations under the EEC Treaty.

Conclusion

In conclusion, I would stress that the Commission's work in implementing the Green Paper must be viewed against the wider background of the move of the European Community towards an area without internal frontiers in Europe by 1992 in which the free movement of goods, persons, services and capital will be ensured.

The Commission's study of the Economics of 1992[3] confirmed that the development of the Common Market for telecommunications services and equipment now promises major savings to the economy along with improved competitiveness. From a combined equipment and services market of around ECU 80 billion in the EC, gains of up to ECU 10 billion are there to be realized from the Green Paper proposals.

That is our objective. And we are on target.

Footnotes

1. "Towards a Dynamic European Economy—Green Paper on the Development of the Common Market for Telecommunications Services and Equipment," COM(87) 290, Brussels, June 1987.

2. "Towards a Competitive Community-Wide Telecommunications Market in 1992—Implementing the Green Paper," COM(88) 48, Brussels, February 1988.

3. "The Economics of 1992—An Assessment of the Potential Effects of Completing the Internal Market of the European Community," March 1988.

Problems of TV Satellite Profitability Discussed

55002438 Paris, L'USINE NOUVELLE in French8 Dec 88 p 29

[Article by Jean-Pierre Jolivet: "Television Satellites: Profitability Impossible"; first paragraph is L'USINE NOUVELLE subhead.]

[Text] TDF1 is still waiting for customers, yet Astra is being readied for launch with unleased capacity. Despite their promoters' optimism, these European satellites are condemned to rely on government financial backing.

When Ariane blasts off again on Friday, 9 December, Europe's first private direct TV broadcast satellite, Astra, will join TDF1 in geostationary orbit. Many would like to see in this event the beginning of the commercial era for direct television broadcast satellites. However, economic reality threatens to be very different. Like many new technologies, this first generation may be condemned to rely on state financial backing.

We knew this was true of TDF1, whose experimental broadcasts (170 watts per 230-watt repeater) are a first success. Yet, a month after its launch, TDF1 still has no leasors despite promotional rates of 70 million francs a year for a 10-year lease. Only Seven, the European cultural channel, and the Bundespost have expressed an interest. France Telecom's participation in TDF1 capital, which will make it possible to finance the French direct TV broadcast satellite system, has not resolved matters. The stumbling block is economic reality.

Enter the valiant Andre Rousselet, president and chairman of Canal Plus. In a recent letter to Communications Minister Catherine Tasca, who is in charge of programming, he applied for the job of operating two of the TDF1 satellite channels. The first would relay Canal Plus, a program powerhouse with 2.8 million subscribers and a potential 350,000 more not currently served by the Canal Plus network. The second would be used by a German- and American-backed service targeting West Germany. Rousselet has also been negotiating to get Caisse des Depots to apply for a youth-oriented service combining Canal J and Canal Plus.

Astra's promoters, Societe Europeene de Satellites (SES) [European Satellite Company], are betting on offering a large number of channels. The idea is to undercut annual lease rates on the government-operated Telecom 1 and Eutelsat. So far 9 out of 16 channels have been leased: 5 by Rupert Murdoch's Sky Television, 2 by British publisher VH Smith, and 2 by the Scandinavian Scansat. Britisher Robert Maxwell is said to be about to lease two or three others.

However, with the not-very-successful Societe Europeene de Satellites campaign to find German operators in high gear, some are beginning to question the optimism of Astra's promoters. Andrea Caruso, general director of Eutelsat, a consortium of 26 government postal, telephone, and telegraph administrations, unhesitatingly predicts that, without the support of the government of Luxembourg, the Astra satellite will have a hard time turning a profit. At France Telecom, they are talking about audacity.

Each player in the as yet undefined telecom market is trying to corner direct television broadcasting; government postal, telephone, and telegraph administrations have led the way. France Telecom, which has repeaters for lease for 30 million francs a year, is quick to point to the demonstrations in which D2 Mac Paquet TV broadcasts were captured by small-diameter antennas via its Telecom 1 satellite.

Eutelsat, which earns 75 percent of its operating revenues by transmitting TV services such as Sky Channel, TV 5, Super Channel, and RTL Plus, is finishing technical and financial development of its second generation Europesat direct TV broadcast satellites, scheduled for launch beginning in 1995. They boast 120-watt repeaters and will have up to 14 channels, with reconfiguration of each beam according to demand. The goal is to make leasing one tenth as expensive.

But between now and then Europe will have to face a dual threat from American programs and Japanese high-definition TV. The industry feels that, given the stakes, government support of direct TV broadcast satellites is justified.

Thirteen European Satellites in Service by 1991

	Country	Launch	Number and Power of Repeaters	Cost (Billions of Francs)
TDF1 TDF2 (2 Satellites)	France	October 1988 and 1990	5 230 W Repeaters	3
TV SAT (1 Satellite)	FRG	Mid 1987	5 230 W Repeaters	3*
TELE-X (1 Satellite)	Sweden	Mid 1989	5 230 W Repeaters	1.5
ASTRA (2 Satellites)	Luxembourg and European Investors	December 1988 and 1991	16 45 W Repeaters	1.3
BSB (2 Satellites)	United Kingdom and British, French, and Australian Investors	Late 1989 and Late 1990	5 110 W Repeaters	6.5
Eutelsat 2 (4 Satellites)	Consortium of 26 European Postal, Telegraph, and Telephone Administrations	Beginning 1990	16 50 W Repeaters	3.5
Olympus (1 Satellite)	European Space Agency	Mid 1989	2 230 W Repeaters	3

*Includes TV SAT 1, which broke down after launch in late 1987.

EC Commission Adopts Decisions on ONP, Services

AN890068 Brussels EC INFORMATION MEMO in English No P-147 Dec 88 pp 1-3

[Report: "The Commission Adopts Two Important Decisions in the Field of Telecommunications"]

[Text] The Commission has recently adopted two important, complementary decisions regarding the gradual establishment of an internal market in the field of telecommunications services: one to ensure compliance with competition standards and the other to harmonize the conditions for access to the telecommunications networks, Open Network Provision (ONP).

Firstly, the Commission has adopted the broad outline of a new Commission directive based on Article 90 of the Treaty in order to open the markets for telecommunications services up to competition. Secondly, it has adopted a proposal for a Council directive, based on Article 100a, setting the framework for the application of harmonized conditions to open access to, and use of, the public telecommunications infrastructure and services.

The two measures are important steps forward in implementing the proposals set out in the Commission's Green Paper on the development of the common market for telecommunications services and equipment published in 1987. The central concept of the Green Paper is to introduce greater competition in the telecommunications sector.

Competition in the Services Markets

The first directive asks the member states to allow competition in telecommunications services and follows the same lines as the directive on terminals adopted on 16 May 1988.

Article 90 of the Treaty prohibits the member states from taking any measures contrary to competition and the free movement of goods and services as regards the public undertakings and any others to which they grant special or exclusive rights. The Commission, which is the guardian of the treaties, must, where appropriate, address directives to the member states setting out their specific obligations in situations in which the Commission would probably otherwise have to initiate infringement proceedings under the Treaty rules.

Restrictions on the use of the infrastructure made available to the suppliers of services by the PTTs in some member states and tariffs out of proportion to costs were restricting the supply of telecommunications services. Over the past few years, there has been spectacular growth in this market, in particular as regards data transmission services, where an annual rate of 15 to 25 percent is forecast following the removal of the legal restraints referred to in the directive. It is therefore essential to open these services up to competition so that suppliers can tailor them to customer requirements at the lowest cost.

The abolition of the exclusive rights granted to the PTTs, except those relating to the establishment of the network and voice telephony, will enable other suppliers to approach users directly using circuits rented from the PTTs and the legal barriers separating the national markets will thus be abolished.

The Commission does not plan to include the telex service in the directive since its use is currently declining following the development of telefax. It therefore requires a specific approach.

The directive will also ask the member states at the same time to abolish all restrictions on the processing of signals before transmission within the network and to publish all of the technical specifications relating to their networks to enable suppliers in the member states to adapt to them.

The member states will therefore have to separate the regulatory powers of the PTTs from their commercial activities to prevent them from thwarting the supply of services by competitors or raising its cost.

The directive will also ask the PTTs to enable their customers to terminate long-term contracts concluded at a time when they had exclusive rights, thus enabling the users, if they so wish, to turn to other suppliers.

The Commission directive will also apply to agreements concluded between the PTTs themselves or between them and other undertakings and any plans these administrations might have to embark upon new telecommunications activities. The member states will have to provide the Commission with regular information so that it can check that any such agreements or new activities do not pose a threat to competition in this sector.

Rules Governing the Future Use of Networks (ONP)

The ONP directive lays down the guiding principles and the structural framework within which the suppliers of telecommunications services may have access to and use the public network. The Commission approach may be summarized as follows:

- The harmonized conditions for ONP must be based on objective criteria, be transparent and published in a suitable manner. They must not discriminate between nationals of a member state and other nationals and must guarantee equality of access.
- The ONP conditions must develop and be established gradually. Emphasis must be placed on the development of harmonized tenders that are specially adapted to the value-added service supplied and available to all users.
- The ONP conditions require the development of open network standards as part of an overall Community approach to European standards. The development of harmonized ONP conditions will concern three main sectors:
- —Existing technical interfaces must be used if possible. Where new technical standards are necessary for ONP tenders, the European Telecommunications Standards Institute (ETSI) must be asked to draft them in the light of the development of European and international standards.
- —The definition of harmonized conditions of use which must apply to ONP tenders and which concern a number of parameters such as the provision time, contractual period, service quality, conditions for shared use, use by third parties, resale of capacity and interconnection of networks, which must be compatible with the Treaty rules.
- —The definition of harmonized tariff principles based on a number of guidelines such as cost adjustment to costs, sufficiently wide publication and the application to all users without discrimination.

The ultimate aim of the Commission's initiative is the mutual recognition of authorization procedures so that an authorization obtained in one member state entitles a supplier of services to operate throughout the Community without having to submit to any other procedures.

The liberalization of the telecommunications services will specifically concern the value-added services such as those to improve telecommunications functions (protocol conversion, code formatting), the information services which provide access to databanks, remote data-processing services, message recording and retransmission services (electronic mail), transactional services (financial transactions, electronic commercial data transfer), and remote activity services (teleshopping, telebooking and remote control).

The Commission will start consultations with the member states in January 1989 in order that the outcome of the consultations and a proposed directive for final adoption can be presented in mid-March.

RACE Follow-Up Program Described

AN890054 Amsterdam COMPUTABLE in Dutch 18 Nov 88 pp 14-15

[Article by Yvette Cramer: "RACE Initiates Network Services Study Leading to an ISDN Action Plan Beginning in 1990"]

[Text] Next year, the RACE [R&D in Advanced Communications Technologies in Europe] Directorate of DG XIII (for Telecommunications, Information Industries,

and Innovation) will commission a preliminary study on RISE [R&D on Integrated Service Engineering]. The study should result in an action plan extending beyond 1990 and focusing on broadband network services. DG XIII considers RISE a follow-up program to RACE.

The proposal for the RISE project's preliminary study states: "The development of future services is complicated by the lack of some essential information, whereas decisions regarding major systems and investments are imminent." One way of finding out which services are required and to what extent is to ask present users what future services they would like. However, "experience shows that such surveys are unreliable and provide inadequate justification for major investments and policy decisions." The RACE Directorate is therefore considering a different approach.

The principal issues in the preliminary phase of the RISE project are the definition of broadband network services and the study of the technologies needed to implement them. The future broadband digital networks—also referred to as broadband ISDN [Integrated Services Digital Network]—will support not only telephone, telex, telefax, and data traffic, but also video image transmission, for example. Since it is difficult to anticipate how the services will develop, the RISE project will adopt the so-called "Services Primitives" [Basic Services] approach. These are standard modules that can be combined to create a variety of services covering the different types of communication. Indeed, the RISE initiators feel it is easier to make reliable prognoses based on generic features, characteristics, and functions that will constitute future services than to anticipate ready-made integrated services that will eventually be available.

Intricate and Demanding

The RISE initiators adopted this rather abstact approach because it readily allows them to compile a list of features required—for video transmission, for instance. It should also be possible to define technical and functional specifications for unspecified services. The RISE proposal says that the technical elaboration of the Services Primitives concept will be "extremely intricate and demanding" in the light of the integrated and open communications systems of the late 1990's. In DG-XIII circles, RISE is considered a follow-up program to RACE. However, whereas RACE concentrates mainly on the development of new technologies needed for a European-wide broadband communications network, RISE will focus on "integrated services" (sometimes referred to as value-added network services).

Invitation

The RACE Directorate has invited a limited number of European companies to participate in the preliminary study. The final selection is due by the end of the month. The participants will have to make a systematic overview of both currently available techniques and existing literature in the field of integrated services. A budget will obviously also be drawn up. "On the basis of the preliminary study, a schedule will be drawn up to take effect by the end of 1990 at the earliest," says Dr Cand N.P.F. de Waard from the EC Liaison Office.

Since the RISE project is still in an embryonic stage, little is known so far about budgets, number of participants, and man-years. The preliminary study is slated to start on 9 January 1989, and the results should be ready for publication by the end of that year.

EC Advisers Issue 'Strategic Audit' of RACE

AN890086 Brussels EC PRESS RELEASE in English No IP(89) 49, 3 Feb 89 pp 1-3

[Report: "First Strategic Plan for Advanced Communications for Europe in the 1990's"]

[Text] EC Commission Vice President Pandolfi, responsible for research and telecommunications, yesterday stressed that effective, advanced communications will be essential for European business competitivity, employment and prosperity in the 1990s and beyond. Advanced communications will also open up new possibilities in such areas as education, health care, cultural and leisure activities.

Mr Pandolfi was speaking at the presentation of the first report of a series of strategic audits of the situation in Europe for the development of advanced communications, carried out in the framework of the European Commission's RACE programme.

Practically all EC and EFTA [European Free-Trade Association] telecommunication administrations and telematic equipment manufacturers have joined together in the framework of the Community's RACE programme [Research in Advanced Communications Technologies in Europe], aimed at providing Europe rapidly and efficiently with advanced telecommunications services. The work in RACE will help to clarify techno-economic options but needs to be complemented by strategic analyses. Therefore, when RACE was officially launched on 14 December 1987, it was decided to carry out annual Strategic Audits of developments in advanced communications and their implications.

The first such Strategic Audit has now been completed. It has concentrated on global objectives and priorities, taking into account political, social, economic, technical and industrial developments and the evolution of demand for advanced telecommunications.[1]

The audit has identified key issues in the establishment of advance communications in Europe and formulated a set of recommendations for action by governments, the European Commission, telecommunication administrations, European industries, telecommunications service providers and standardization organisations.

The set of recommendations constitutes the first comprehensive strategic plan for the establishment of advanced communications in Europe and will provide the basis for debate on the very important and wide-ranging issues related to regulatory frameworks, investment strategies and technical options.

Summary of Recommendations for Action

The introduction of advanced broadband communications will provide potentially enormous benefits to Europe. However, these can only be realised through innovative services relying on a new generation of terminal facilities and infrastructures. This large-scale deployment of new technologies and services will involve a major investment programme by telecommunications administrations, businesses and individuals of about ECU 500 billion over a decade.

While R&D cooperation has been successfully established in the framework of RACE, it is considered that further action is now needed both in the industrial and regulatory areas to exploit the results for the benefit of Europe's telecommunications users.

The following further actions are recommended for consideration:

A. National governments should collaborate to define by 1992 the conditions and regulatory provisions which should be applied to the introduction of pan-European advanced communications services.

B. Telecommunications, broadcasting and cable TV administrations should propose, by mid-1989, a concerted approach to, and a timetable for, development and use of IBC infrastructures for both telecommunications and entertainment services, including HDTV (high definition television), taking full advantage of private-sector investment initiatives when appropriate.

C. Telecommunications administrations should prepare an initial memorandum of understanding by 1990 on closer collaboration in their intra-European long-distance links and operations.

D. Service providers should specify, by the end of 1990, a first set of service requirements, commercial conditions and regulatory provisions which would favour an early and widespread use of IBC services.

E. Telecommunications, broadcasting and cable TV administrations, service providers and the telematics industry should agree on a memorandum of understanding by mid-1989 to complement the collaborative R&D in RACE by pilot implementation of some IBC services on a European scale for a business-led introduction of IBC by 1992.

F. Collaborative R&D should be extended to include integrated service engineering, fixed and mobile applications and techniques for verification and testing of communications equipment and service functions by the end of 1989.

G. European standardization bodies should reinforce and coordinate their efforts towards international standardization for IBC and advanced services. A standardization schedule should be established by mid-1989, particularly for ATM (asynchronous transfer mode).[2]

H. Member-states should address the problem of frequency allocation in Europe over the whole range of frequencies and applications. They should permit, by 1992, a rationalization of frequency allocations reflecting evolving needs and priorities.

Footnotes

1. The Strategic Audit has been carried out by seven experienced advisors acting in an independent, personal capacity:

- John Alvey, a senior UK telecommunications advisor
- Jose Vlana Baptista, president of the Portuguese Telecommunications Administration
- John Barret, director of the RACE industrial consortium responsible for RACE consensus management
- Basilio Catania, general manager of CSELT [Telecommunications Laboratory and Study Center] in Italy
- Jozef Cornu, executive vice president, Alcatel
- Jacques Dondoux, president of IREST [Institute of Economic and Social Research into Telecommunications], formerly director of the DGT in France
- Dietrich Elias, former state secretary and president of DETECON in the FRG.

2. ATM is a switching and transmission technique that allows flexible use of transmission capacity.

Contracts Signed on Second Phase of RACE

AN890083 Brussels EC PRESS RELEASE in English No IP(89) 51, 3 Feb 89 p 1

[Report: "RACE: Forty New Contracts Signed"]

[Text] The EC Commission has signed contracts for the launching of a second set of projects within the Community's RACE programme. RACE is concerned with Research and Development on Advanced Communications for Europe and will contribute to the development of Integrated Broadband Communications (IBC) throughout the EC. 1995 is the target date for commercial introduction of IBC services. These will offer European businesses and individuals the information infrastructure and services essential for effective competition in the emerging information-based economy.

Forty new projects have been selected from over 80 proposals submitted by international consortia in response to a Call for Proposals published in July 1988. These new projects are complementary to the 48 RACE projects that started in January 1988. The established projects cover the strategic planning and specifications for Integrated Broadband Communications (Part I of RACE) and provide a sound technology base (Part II of RACE). The new projects focus on integration of technologies and systems, the verification and testing of concepts and systems and pilot applications of future IBC services in key industries.

Applications will be developed in banking and finance, media and publishing, manufacturing, transport, distribution and health care. A total of 20 different applications are covered. They will investigate and demonstrate the enormous potential of Integrated Broadband Communications for industrial competitiveness and in new ways of distributing work. In addition, a "European Museum Network" will investigate the potential of advanced communications in strengthening the cultural links within Europe. Two projects will focus on meeting the needs of the elderly and disabled in the design of future IBC systems and applications.

With the signature of contracts, 190 new companies and organisations have been added to the list of 187 already involved in the RACE programme. They include leading-edge users of advanced communications in all the key industrial sectors as well as equipment manufacturers, telecommunication network operators and service providers.

With the new projects, over 90 percent of the RACE budget of ECU 1.1 billion (50 percent from the EC budget and 50 percent from partners) will be allocated.

EUTELSAT Decides on 6-Satellite Network

AN890074 Chichester EURO-TELECOM in English 13 Jan 89 p 4

[Article: "EUTELSAT To Provide Six-Satellite Operation"]

[Text] At a meeting of the Board of Signatories of the European Telecommunications Satellite Organisation (EUTELSAT) it has been decided that the Organisation will provide a network based on at least six operational satellites in order to satisfy existing and anticipated demands for protected satellite capacity in Europe.

The first four EUTELSAT II second-generation medium-power satellites will take over and extend the operation of the four EUTELSAT I satellites currently in orbit. By the time they are in orbit, two EUTELSAT I satellites (F1 and F2) will have reached the end of their lives. The remaining two operational EUTELSAT I satellites (F4 and F5) will continue to be used during a transitional period.

To ensure as rapid an availability as possible of four operational EUTELSAT II satellites, Aerospatiale, prime contractor for the programme, has agreed to accelerate the delivery of EUTELSAT II-F3 and subsequent flight units. As a result, a network of four EUTELSAT II satellites will be commercially operational by the end of 1991. The first is scheduled for launch in spring 1990 and the following satellites will be launched at six month intervals.

In addition, EUTELSAT has authorised Aerospatiale to build the hardware necessary to provide a specially tailored Superbeam coverage of Turkey on a further EUTELSAT II satellite. The Turkish authorities have confirmed reservation for five transponders with this Superbeam coverage, plus a sixth transponder with Superbeam coverage over Central Europe. This network is expected to start operating in early 1992.

A decision to procure EUTELSAT II-F5 is expected to be taken by the EUTELSAT Board of Signatories in the forthcoming weeks, and no later than the end of February 1989. It is expected to be followed by an order for F6 towards the end of 1989.

Eutelsat To Develop Second-Generation TV Satellites; Funds Allocated

Europesat Project

AN890011 Paris TELEMATIQUE MAGAZINE in French Oct 88 p 7

[Article: "Europesat—Television Programs on Request"]

[Text] Although no European broadcast direct satellite is operational yet, Europe is preparing the second generation of this type of satellite. In fact, the engineers who work for Eutelsat, the European Telecommunications Satellite Organization, have recently developed the satellites that will replace such satellites as TDF 1 and TDF 2, TV-SAT, Tele-X, BSB, and Astra in 1995. This project, dubbed "Europesat," will be submitted to the 26-member countries of Eutelsat in the fall in order for them to examine the proposed implementation schedule as well as the system characteristics as designed by Andre Causo, general manager of Eutelsat.

Today, the Europesat project involves three orbiting satellites, including one back-up satellite. Operating from the same orbital position (at 36,000 km above the equator), they provide global coverage of the Eutelsat member countries.

Each satellite is to consist of 14 channels and a certain number of beams overlapping the downlink to satisfy regional and linguistic requirements.

In order to ensure maximum flexibility, Europesat's capacity should be reconfigurable in orbit by remote

ground control, allowing the number of channels allocated to each beam to be modified on demand. Thus, the user would be able to change the assignment of each channel without having to lease the channel on a permanent basis. This should make a channel's rental fee 8 to 10 times less expensive than the current rate and should make it possible to reach the maximum number of users depending on the time of day.

Of course, Europesat satellite transmissions will be able to be received by small-diameter antennae and broadcast with high definition for exceptional picture quality on the television sets of tomorrow.

EIB Funding

AN890055 Amsterdam COMPUTERWORLD in Dutch 1 Nov 88 p 7

[Article by Jan Schils: "EIB Funding for Eutelsat"]

[Text] The European Investment Bank (EIB) has just announced that it will allocate ECU 100 million (234 million Dutch guilders) for the next 7 years to Eutelsat, the European Telecommunications Satellite Organization.

Eutelsat is an intergovernmental European organization—existing provisionally since 1977 and effectively since September 1985 with its headquarters in Paris. It is in charge of operating the space segment used by a set of regional European telecommunications satellites serving the 26 member-states, including the 12 EC countries.

Replacement

The present (first) generation of Eutelsat satellites will be operational until 1990/1994. The second-generation satellites, which will gradually replace the former as of late 1989, will have a far greater capacity. This will enable Eutelsat to cope with the increasing demand for both international and national telecommunications links throughout Europe.

Eutelsat—which came about as a result of the cooperation between European telecommunications organizations and the space industry—provides satellite communications offering better services to European industry. Indeed, the use of satellites will provide upgraded network facilities more adapted to industry's requirements than those of the current network.

Moreover, the new generation of satellites will be able to handle massive television program exchanges through the use of cable television. Finally, the manufacture of these satellites will boost the implementation of advanced technologies.

Considering the major significance of the project in various respects, the EIB Board of Governors (the finance ministers of the 12 EC countries) has granted the EIB special authorization to participate in its financing. An initial 175-million-guilder grant had already been committed to Eutelsat in 1986.

CANADA

CNCP in New Bid To Offer Long-Distance Service

55200021 Toronto THE GLOBE AND MAIL in English 27 Jan 89 p B3

[Article by Angela Barnes]

[Text] CNCP Telecommunications plans to re-apply to the Canadian Radio-Television and Telecommunications Commission for permission to offer public long-distance telephone services.

CNCP, which was rebuffed in 1985 on its first bid to crack the telephone companies' monopoly on the $6-billion to 7-billion a year long-distance business, has been sounding out federal government officials. It expects to file its application in the next six to nine months.

"There have been ongoing discussions with the Department of Communications, which lead us to the conclusion that the time is now appropriate for Canadian consumers to benefit from long-distance competition," said George Harvey, president of the Toronto-based company.

"Canadian business is clamoring for (long-distance competition) because their telecom costs are 50 to 60 per cent higher than in the United States, even after conversion of the dollar," he said. "If you want to compete against the U.S., with or without free trade, and if your third-largest expense ratio is 50 per cent higher than your competitors, then you have got a problem."

The opening of the U.S. market roughly five years ago brought reductions in long-distance rates there.

CNCP also thinks a large proportion of the Canadian public favors competition in public long-distance services, and says its views are backed by research. Furthermore, the company has changed its operations to put itself in a better position to provide such services.

The CRTC rejected the CNCP application in August, 1985, because of concerns about the viability of the planned long-distance service. But it also left open the door to future applications.

The company also may have been encouraged by several recent CRTC decisions that can be interpreted as an indication that the commission will permit more competition in telecommunications services.

Mr Harvey said CNCP's entry into the long-distance market in Ontario, Quebec and British Columbia would mean lower rates and, therefore, lower monthly phone

bills for most consumers and businesses. He said the only customers who would not benefit are those who do not use long-distance.

The battle lines are being drawn up for an expected CRTC hearing on the application.

Bell Canada, a unit of BCE Inc. of Montreal, and British Columbia Telephone Co. of Burnaby, B.C., are sure to oppose the CNCP proposal—it is their territory CNCP plans to invade. When told of CNCP's intentions, Charlie Laberge, vice-president of Bell Canada, said: "Bell Canada is not necessarily convinced that competition in the long-distance market is in the public interest." Studies have indicated it may not be, he said.

The Consumers Association of Canada also intends to oppose CNCP in the public hearing. "We will oppose their application unless they have performed some magic act and can show us that most residential customers and most businesses will not be worse off," said David McKendry, director of CAC's regulated industries program.

The CAC thinks telephone company revenues will decline if competition is allowed in public long distance, and the companies will raise local rates to compensate. That, in turn, would increase monthly phone bills.

And officials of provinces where there are government-owned telephone companies will want their say. If Bell and B.C. Telephone long-distance revenues fall because of competition, the provincial phone companies will see their income cut because of revenue-sharing arrangements on long-distance business through Telecom Canada.

Those groups have as ammunition a number of studies on competition in the Canadian long-distance market, the latest of which was done for the federal-provincial task force on telecommunications. A Peat Marwick study cited in the task force report, released in December, suggested that only 13 per cent of urban residential customers and 15 per cent of rural customers in Bell Canada territory would pay less in monthly phone charges if there were alternative suppliers of long-distance services.

CNCP argues that the Peat Marwick study is seriously flawed. For example, the study works from the assumption that the telephone companies would not cut rates. Mr Harvey maintains they would, and that ensures Bell and B.C. Telephone's customers will benefit from lower long-distance rates as well as those who choose to switch to CNCP.

CNCP is wholly owned by Canadian Pacific Ltd. of Montreal. It expects to be able to capture between 10 and 20 per cent of the long-distance market with lower rates over two to three years.

Tasks Facing Bureau Successor at CRTC Outlined

55200020 Toronto THE TORONTO STAR in English 1 Feb 89 pp D1, D2

[Article by Adam Mayers]

[Text] The incoming chairman of the federal agency that regulates broadcasting and telecommunications will have his hands full from the first day on the job.

As Ottawa ponders a replacement for Andre Bureau, industry insiders and lobby groups have a shopping list of issues they say will dominate the agenda of the Canadian Radio-television Telecommunications Commission in the near future.

Some are as pressing as whether to permit competition in the long-distance telephone business, or how to keep the CRTC free of cabinet interference.

Others are longer-term problems, including whether to permit cable television companies to transmit data or carry telephone conversations on their coaxial cables.

Bureau took the broadcasting industry by surprise yesterday when he announced he'll step down March 1 for personal reasons. His seven-year term at the helm of the federal body was not up until November, 1990.

"Andre Bureau had many strengths, among them that he understood the issues, the system and the industry, said Phil Lind, senior vice-president of programming and planning at Rogers Communications Inc. "You can bet there will be a lot of thought put to his replacement."

Spokesman say Bureau's resignation came as a surprise and most were reluctant to speculate on a successor. The position will be filled by the Prime Minister on the recommendation of Communications Minister Marcel Masse.

Two names that cropped up are former communications minister Flora Macdonald, defeated in the last federal election, and University of Toronto professor Hudson Janisk, an expert on telecommunications regulations.

No matter who fills the job, here are the issues to be faced:

—Concentration of broadcast ownership.

"Bureau believed there should be a strong Canadian presence on the airwaves and he allowed further concentration of ownership to create that," said Janet Yale, legal counsel for the Consumers Association of Canada. "He had a vision, but it came at the expense of consumers."

—Further deregulation of cable television.

Cable companies are permitted to increase their rates each year by 80 percent of inflation without CRTC approval. Yale said there should be a review of that process to see how it's working.

"Just because the consumer price index goes up doesn't mean that the cost of providing cable service is going up by the same amount," she said.

Phil Lind of Rogers said those increases are the only part of the business not closely controlled by the CRTC.

"We have a very mild form of deregulation," he said. "Everything else has to go to a public hearing."

—Long-distance telephone competition.

CNCP Telecommunications plans to apply later this year for the right to compete with Bell Canada for long-distance service. CNCP says the competition will make long distance cheaper. Consumers groups say it could make it more expensive.

"The reality is that a second long-distance service doesn't stand alone," Yale said. "Regulators have to decide whether they want new competition at a cost of increased rates for local calls."

Joe Schmidt, CNCP's vice-president of regulations and government matters, doesn't see it that way. He said a recent federal-provincial study of long-distance rates shows that local calls won't necessarily rise.

"That's the argument of monopolies," he said. "We would like to see it opened up."

—Cabinet power over the CRTC.

The cabinet wants the power to direct CRTC policy. Currently, the cabinet can appeal CRTC decisions, but after the fact and often too late.

"Bureau opposed this move," said Ken Engelhart, legal counsel for the Canadian Business Telecommunications Alliance. "The effect of the power of direction is to ensure that policy is made by elected officials and implemented by the CRTC.

"The fear is that it will make the CRTC too political."

—Rate rebalancing.

Bell wanted to cut its long-distance rates and raise rates for local calls, which are subsidized by the higher long-distance rates. The CRTC let Bell cut the long-distance charges but then decided that because of excess profitability, local calls could not be raised for now.

—How the phone companies should be regulated.

Should their annual rate increase be based on calculations of revenues and expenses and weeks of agonizing public hearings, or a simple percentage increase set by the CRTC?

—Cablephone.

Should cable companies be permitted to carry telephone conversations or data now carried over phone lines? Should telephone companies provide cable, and how would it be regulated? With fibre optics, the issue is becoming more pressing.

"That's still a long way off but it's coming," said Rogers Lind. "I think these sorts of skirmishes should be encouraged because they lead to lower prices."

—Balkanization of policy.

Ontario, Quebec and British Columbian telephone systems are controlled by the CRTC. Other systems fall under provincial jurisdictions.

"We have a splintered approach and we would like to see a truly national CRTC," said CNCP's Schmidt.

—The new Broadcast Act.

Introduced by Flora Macdonald, the bill is being reworked. It intends to add Canadian content to broadcasting as well as see new regulations for the cable industry and the CRTC.

FINLAND

Private Firm Applies To Compete With State Mobile Phone Net

55002442a Helsinki HELSINGIN SANOMAT in Finnish 6 Jan 89 p 25

[Article: "Private Firm Radiolinja Applied for a Licence To Join the GSM-Net"; first paragraph is HELSINGIN SANOMAT introduction]

[Text] The Cabinet will discuss the new mobile phone net in the spring.

Radiolinja Ltd, established by the initiative of private telephone companies, applied for a mobile phone license from the Ministry of Traffic. The company's goal is to build a mobile phone net to compete with the Post and Telecommunications Administration [PTL].

The licensing application is in its first round. The Ministry of Traffic has requested eight expert opinions by the beginning of February.

A statement was requested from, among others, the PTL, who already had written a memorandum opposing the idea of a private mobile phone net.

The Ministry of Traffic intends to present the licensing application in March-April to the government, which will make the final decision.

Radiolinja is seeking a license to build and run a nationwide mobile phone net. The company would like to first start building around the capital. The net would be extended gradually to the rest of the country.

Radiolinja plans to build a general European gsm-net. The gsm-net is digital and capable of transmitting considerably more calls than the current analog NMT-[Nordic Mobile Telephone] nets.

The PTL is also planning to build a nationwide gsm-net. Together with other Nordic telecommunications offices, the PTL has already ordered a gsm-testing system from the American company Motorola.

Joint Company Discussed

Minister of Traffic Pekka Vennamo (Finnish Rural Party) has not yet expressed his opinion regarding a private mobile phone net.

After hearing about the founding of Radiolinja in September, the Ministry's chief secretary, Juhani Kuopela, stated that "double systems make no sense in this country."

The Ministry of Traffic has considered the idea that the PTL in cooperation with the private sector would build the gsm-net. The cooperation would be in the form of a joint company with shares.

The founders of Radiolinja announced in September that they could sell mobile phone calls for as much as 50 percent less than the PTL. According to them, the PTL currently overcharges for the mobile phone calls.

According to the PTL, the NMT 900 telephone fees in Finland are among the cheapest in Europe. From the beginning of the year the PTL lowered the rates for NMT 450 net to be at the average European level. Before these changes the rates for 450 net were above the European average.

Wide Support for Radiolinja

The idea for the founding of Radiolinja was born in the country's largest private phone company, that is, in Helsinki's Phone Company (HPY). The HPY has summoned wide support for the project to win the political approval.

In addition to the HPY, the owners of Radiolinja include five other regional phone companies, four central firms of trade, five banks, and five insurance companies.

Kesko's director general, Eero Utter, is the chairman of the supervisory board, and HPY's director general, Jarmo Kulm, is the chairman of the board.

Nokia To Buy Mobile Phone Microcircuits From U.S. Firm

55002442b Helsinki HELSINGIN SANOMAT in Finnish 19 Jan 89 p 38

[Text] Nokia-Mobira will buy microcircuits for gsm-standard digital mobile phones from AT&T [American Telephone & Telegraph].

In the early 1990's, gsm-mobile phone traffic will start in all of Europe. Mobira's current analog mobile phones do not use circuits manufactured by AT&T. The company is planning to use other than AT&T-manufactured microcircuits in their gsm-phones.

For the analog mobile phones, Nokia is buying components from the Philippines, from Motorola, and from several Japanese companies, among others.

Nokia-Mobira considers the present signed agreement of cooperation a strategically important one. The company is not willing to estimate its monetary value.

Mobira's director of research, Heikki Huttunen, sizes up the situation: "Only a few giants have available the technology required for the digital phones."

Nokia's Micronas manufactures microcircuits, but the Finnish company "was not even a realistic alternative for AT&T at the moment," Huttunen continues.

The so called cmos-technology is applied in manufacturing gsm-circuits.

AT&T is the world's leading telecommunications firm. Nokia-Mobira is the world's largest manufacturer of mobile phones. Its market share is about 14 percent.

Finland First Nordic Country To Use X400 Service

55002442c Helsinki HELSINGIN SANOMAT in Finnish 19 Jan 89 p 8

[Text] On Wednesday in Jyvaskyla the director general of the Post and Telecommunications Administration [PTL] announced that Finland is the first Nordic country planning to use X400 teleservice. X400 standards define the way in which different computers can communicate with each other.

Telebox users, Memo computers, MPDesk-systems, and soon even Elisa electronic mail users can communicate with each other through the PTL service. The service named Mailnet 400 will immediately have over 50,000 users in Finland.

Public Data Network To Undergo Testing

55002433b Helsinki HELSINGIN SANOMAT in Finnish 19 Dec 88 p 17

[Article: "Public Data Network To Be Tested Next Year"]

[Text] A plan for testing the public data network and the citizens' data station will be completed in February. At least 20 services suitable for broad use may be included in the test. The goal is to find the key services on which it would be possible to base the network's activity.

The planned data network consists of users' workstations, service stations, and data bases as well as the local networks, data transfer links, and telephone/data transfer centers that unite them.

In practice, a citizen could receive on his home computer terminal information about train schedules or about what is on the day's menu. Closed data networks already function in several business firms and groups of business firms, and data networks open to the general public are also in operation.

So the technical know-how and other prerequisites for a public data network already exist. However, implementation of the network requires planning and testing by means of which the network's services and service standards are defined.

During a preliminary study launched last spring, the Ministry of Communications managed to clarify domestic videotex and telecommunications network services and become familiar with the system that functions in France. The services needed by and offered to schools, households, government agencies, and small businesses were made clear. Seminars are also being arranged to clarify goals.

The test that begins next year has aroused interest in various parts of the country, and several municipalities and organizations have already signed up for it.

NMT-450 Mobile-Phone Network Operational Nationwide

55002433a Helsinki HELSINGIN SANOMAT in Finnish 14 Dec 88 p 23

[Article: "NMT-450 Network To Cover Entire Country"]

[Text] The NMT-450 mobile-phone network has expanded in practice to include the entire country, now that the network has been installed in the area covered by Lapland Province. At the same time, Finland exceeded the limit of 100,000 NMT mobile-phone users.

Roughly a thousand new channels and well over a hundred support stations have been built into the network this year. Altogether, approximately 450 support stations operate in the network, and phone calls are transmitted by about 3,500 channels in different parts of the country.

The national Board of Postal Service and Telecommunications (PTL) promises that construction of the NMT network will continue just as vigorously next year and that the network's service standard will improve. The NMT-450 network's newest center—the most advanced in the Nordic countries—began operating in Tampere in November.

There are now 88,000 users of the NMT-450 network, but, according to the PTL, there is still room for a hundred thousand more. The network's capacity, or radio frequency (450 megahertz), is already full in the Helsinki region. Use of the NMT-900 network has increased rapidly in the densely populated part of Finland.

The NMT-900 covers the key areas of trade, industry, and tourism. By the end of 1990, it will also cover the most important routes in Lapland.

There are three mobile phone networks in Finland: NMT-450, NMT-900, and the manual ARP. The manual network expanded nationwide about 10 years ago. The NMT-900 network is being augmented all the time, but it is estimated that the NMT-450 will be even more inclusive by the turn of the century.

The European GSM mobile phone network, whose commercial activity begins in mid-1991, is being developed through the cooperation of Europe's telecommunications institutes.

Seven hundred million Finnmarks have been invested in the NMT-450 network, which covers the entire country. Customers have invested roughly 1.5 billion Finnmarks in mobile phones. The PTL predicts there will be 600,000 subscribers to mobile phones at the turn of the century.

Along with the other Nordic lands, Finland is one of the world's leading countries in mobile phones. There are more than half a million subscribers to NMT in the Nordic countries.

FRANCE

Aerospatiale To Furnish More Eutelsat Satellites

55002441 Paris QUOTIDIEN DE PARIS in French21-22 Jan 89 p 13

[Text] European Telecommunications Satellite Organization (Eutelsat) has just signed a contract with Aerospatiale for accelerated delivery of four medium-power Eutelsat II satellites. The contract means that, by 1991, Eutelsat will be able to complete its network of four Eutelsat II satellites, which will join the two Eutelsat I satellites still in operation at that time.

The first Eutelsat II will be delivered at year end and is scheduled for launch in early spring 1990. The remaining launches will take place a 6-month intervals and will provide 64 50-watt repeaters to distribute television broadcasts throughout Europe.

Next February Eutelsat plans to order a fifth Eutelsat II from Aerospatiale under the same accelerated-delivery conditions, which will mean that it can be ready for launch by mid 1992, according to the press release.

Eutelsat, which is made up of 26 European countries, currently operates four communications satellites broadcasting radio, television, business service, and telephone signals.

Communications Minister on TDF Satellite

LD2101201489 Paris Domestic Service in French 1800 GMT 21 Jan 89

[Text] At the MIDEM [International Record and Music Industry Fair] in Cannes today, Roland Faure, the chairman and managing director of Radio France, officially presented the public service's three-point radio plan for the TDF-1 satellite: one stereo music channel, one cultural channel, and a news channel—France-Info Internationale. With the decision by the future broadcasting authority still awaited, Communications Minister Jack Lang said he is captivated by the plan.

[Begin Lang recording] It is very exciting. The sound quality is exceptional; the compact disc stereo quality is admirable. Sometimes it is true than when we talk about direct broadcasting by satellite we tend to think about television programs and forget radio programs. As you know, the Germans are also in the running for access to the TDF-1 satellite, and I am very pleased that Radio France has decided on transmission proposals and plans for France-Info Internationale, France-culture and France-Musique. And if our overall plan succeeds, it will make public service radio much stronger throughout Europe and throughout the world. [end recording]

French R&D on Digital Processing of Video Signals

AN890064 Paris FRENCH TECHNOLOGY SURVEY in English Nov 88 pp 6-7

[Article: "Digital Video Signal Restitution"]

[Text] The French Telecommunications Research Centre (CNET) and the Joint Centre for Telecommunications and Television Transmission Research (CCETT) have pooled their resources to develop a digital processing circuit for video signals. The technique consists in oversampling the signals so as to delete the need for analog post-filtering on the output from the DAC (Digital/Analog Converter).

Research into video processing circuits has a threefold aim:

- Simplify filtering and dematrixing functions through digital technology;
- Eventually reduce filtering, dematrixing and DAC functions to a single circuit;
- Make the use of analog video filters easier.

The processing of video signals in digital form has several applications, among which are the following:

- Transmission of still images at 64 kbit/s;
- Processing video signals for direct television transmission by satellite (D2-MAC);
- Improved image quality in terminals (image memory, 100-Hz screening, etc.).

PORTUGAL

New Digital Telephone System for Azores

55002450 Lisbon DIARIO DE NOTICIAS ECONOMIA in Portuguese 30 Jan 89 p 2

[Excerpts] PTT investments in the Azores this year will come to about 2.3 million contos, Mauricio de Chaves, regional director of coordination, announced.

The largest allocations will be invested in automatic networks and station and in the installation of the digital central office at Ponta Delgada, which will be initiated in the second half of this year.

The PTT will move from a predominantly analog system in 1988 to a system with 25 percent digital switching lines and 66 percent digital transmission circuits in 1990.

In this regard, Mauricio de Chaves added that by 1995 all the islands of the Azores will have digital stations, contributing to a "substantial improvement in the quality of service." [passage omitted]

Detailed billing and computerization are other undertakings included in the PTT plan of activities in the Azores. [passage omitted]

UNITED KINGDOM

Marconi To Investigate Laser Satellite Links

AN890075 Chichester EURO-TELECOM in English 13 Jan 89 p 6

[Unattributed article: "Marconi Space Systems To Conduct Advanced Laser Systems Feasibility Study"]

[Text] Britain's Marconi Space Systems Company is to investigate the feasibility of using advanced laser systems as an alternative to microwave links for intersatellite communications. The study, contracted by MATRA ESPACE of France, represents an extension to the European Space Agency's SILEX program, for which Matra is a prime contractor, and will probe the use of laser technology as an additional package to the main SILEX baseline program. The Marconi team will be supported by Standard Telecommunications Laboratories and Marconi Defence Systems as sub-contractors. Space communications links will be essential in the future to maintain continuous contact with low-earth-orbiting spacecraft such as space station elements or earth observation satellites, to enable

the transfer to the ground of large quantities (100 Mb/s and more) of data they generate. Laser communications offer significant advantages over conventional microwave links in size and mass of hardware, plus their virtually unlimited bandwidth and carrying capacity.

First Ultra-Wideband Fiber-Optic Microwave Link Produced

AN890088 Chichester EURO-TELECOM in English 10 Feb 89 p 8

[Article: "Marconi Produces Europe's First Ultra- Wideband Fiber-Optic Microwave Link"]

[Text] From its Electro-Optics Division in Stanmore, Middlesex, Marconi Defence Systems has announced thesuccessful working demonstration of a 1 km-long 2-20 GHz optical fiber cable—the first ultra-wideband optical fiber microwave link to be produced in Europe.

This bandwidth has capacity for 3,000 television channels, or for six million simultaneous telephone conversations to travel the same strand of optical fiber. Allowing for such vastly increased telecommunications traffic along a single cable makes the new system ideal for transmissions to and from remote antennae, and for broadcasting from satellite or high definition television.

The new link uses an external electro-optic modulator in the transfer of information to the optical carrier. Developed at the GEC-Marconi Research Center, the new modulator provides more accurate transmission than links relying on directly modulated semiconductor lasers.

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